

DEPARTMENT OF THE INTERIOR, CANADA

Hon. W. J. ROUSE, Minister; W. W. CONY, Deputy Minister

FORESTRY BRANCH—BULLETIN No. 54

R. H. CAMPBELL, Director of Forestry

FOREST PRODUCTS OF CANADA

1914

PULPWOOD

COMPILED BY

R. G. LEWIS, B.Sc. F.

ASSISTED BY W. GUY H. BOYCE

OTTAWA
GOVERNMENT PRINTING BUREAU

1915



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HON. W. J. ROCHE, Minister; W. W. CORRY, Deputy Minister

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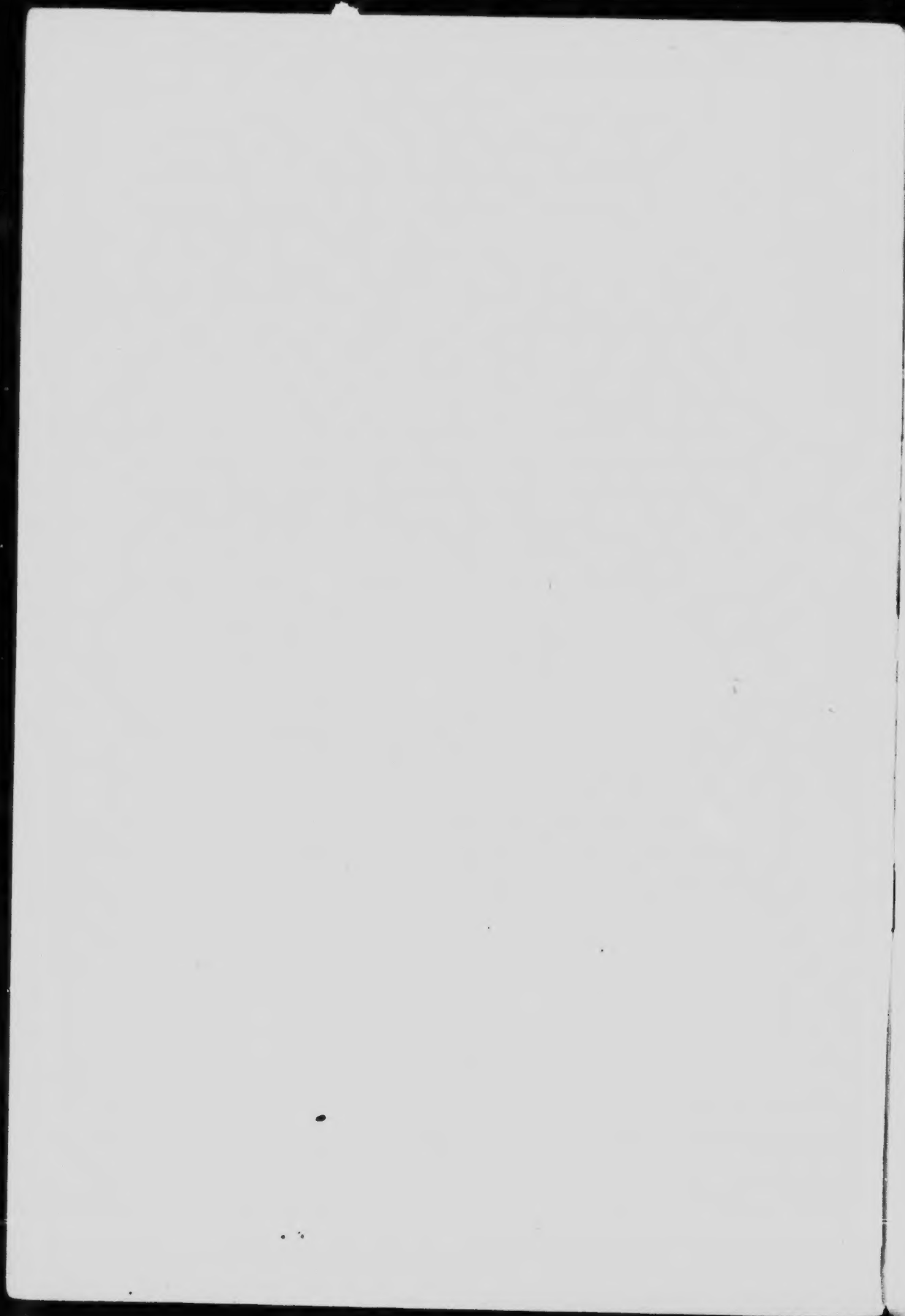
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LETTER OF TRANSMITTAL

FORESTRY BRANCH,
DEPARTMENT OF THE INTERIOR,
OTTAWA, MAY 20, 1915.

SIR,—I beg to transmit herewith a report on the production and manufacture of pulpwood and wood-pulp in Canada in the calendar year 1914, and to recommend its publication as Bulletin No. 54 of this branch.

The report contains statements showing: (1) the quantity and value of pulpwood produced in the Dominion according to the province in which it was produced, the kind of wood used and the method of manufacture; (2) the quantity and value of pulpwood exported from Canada and from the several provinces in an unmanufactured state; and (3) the value of wood-pulp exported from and imported into the Dominion.

The report contains also a map showing the location of the pulp-mills of the Dominion, and a diagram representing graphically the quantities of pulpwood used in Canada in the last five years, 1910 to 1914, inclusive.

I have the honour to be, sir,

Your obedient servant,

W. W. CORY, Esq., C.M.G.,
Deputy Minister of the Interior,
Ottawa.

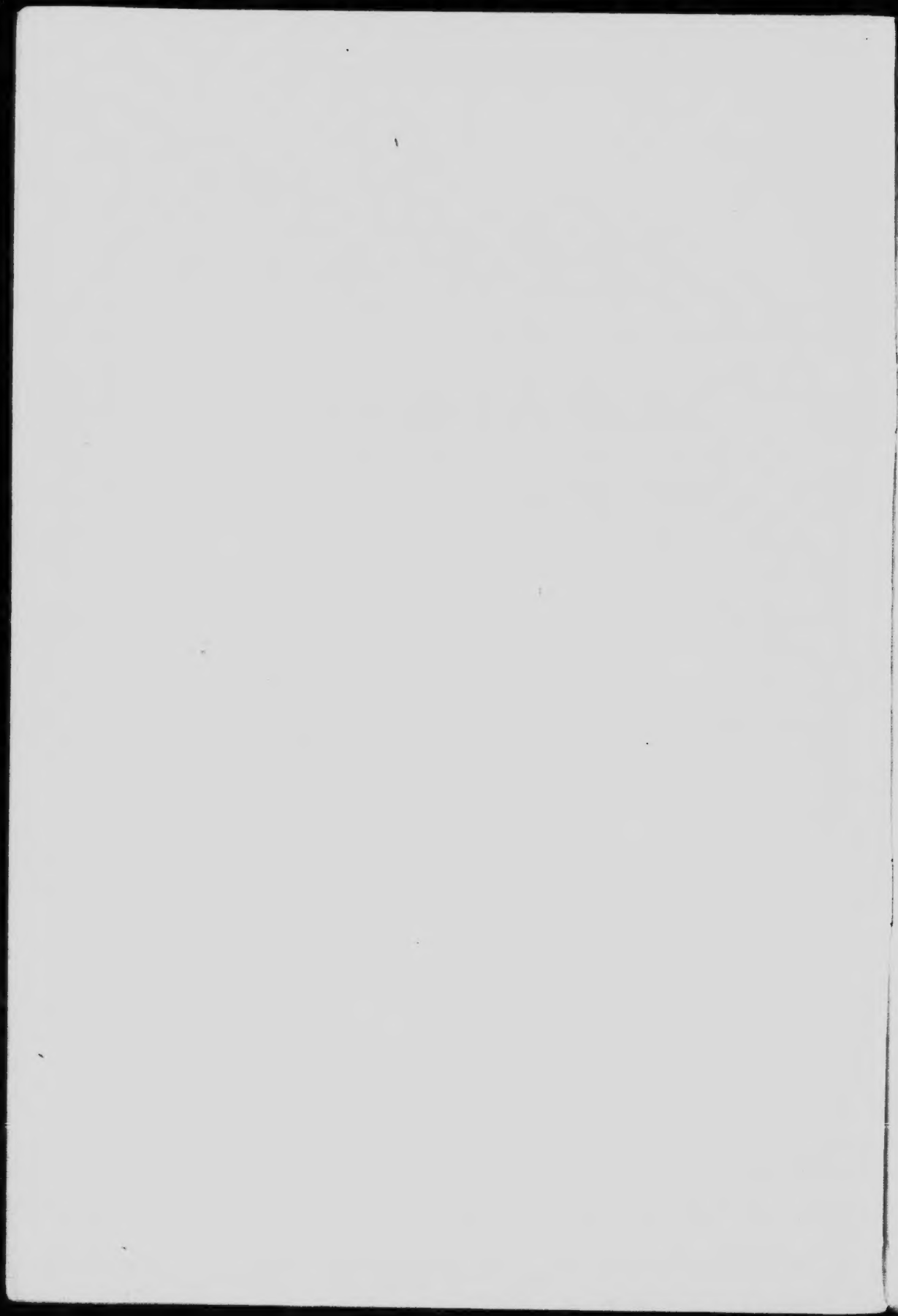
R. H. CAMPBELL,
Director of Forestry.

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Pulpwood Consumption, 1914.

The information in this bulletin was compiled from reports received from forty-nine firms or individuals operating pulp-mills in Canada during 1914. These forty-nine firms operated altogether sixty-six mills, distributed as follows: Quebec, twenty-three firms operating thirty-one mills; Ontario, fifteen firms operating twenty-one mills; Nova Scotia, five firms operating seven mills; New Brunswick, four firms operating four mills; and British Columbia, two firms operating three mills. Five mills operating in 1913 were idle in 1914. Four newly completed mills commenced operations in 1914, and two mills previously idle resumed operations during that year.

In addition to active mills, reports were received from eleven firms whose mills were idle in 1914, and from two firms with mills under construction.

The sixty-six active pulp-mills in Canada in 1914 consumed altogether 1,224,376 cords of pulpwood, valued at the mill at \$8,089,868. In addition to this home consumption a total quantity of 972,508 cords valued at \$6,680,490 was exported in the unmanufactured state from Canada to the United States, making altogether a total production of pulpwood of 2,196,884 cords valued at \$14,770,358.

PULPWOOD.

Table 1 gives the details of the consumption of pulpwood in Canadian mills in 1913 and 1914 by provinces.

TABLE 1.

PULPWOOD, 1913 AND 1914, BY PROVINCES:—Quantity used and average value 1913 and 1914, and per cent distribution and total value 1914.

Provinces.	No. of Active Firms Reporting.	Quantity.		Per cent Distribution.	Total value.	Average value per Cord.	
		1913.	1914.	1914.	1914.	1913.	1914.
		Cords.	Cords.		\$	\$ c.	\$ c.
Canada.	49	1,109,034	1,224,376	100.0	8,089,868	6.53	6.61
Quebec.....	23	629,934	636,496	52.0	4,148,405	6.52	6.52
Ontario.....	15	321,244	447,751	36.6	3,172,235	7.15	7.08
British Columbia.....	2	84,173	80,013	6.5	426,444	4.77	5.33
New Brunswick.....	4	53,121	49,339	4.0	296,769	6.44	6.01
Nova Scotia.....	5	20,562	10,777	0.9	46,015	4.61	4.27

In spite of the widespread disturbances to industry in general occasioned by the war, the manufacture of wood-pulp in Canada is still on the increase. During the calendar year 1914 the quantity of wood used in this industry showed an increase of 10.4 per cent over the preceding year. The inserted diagram shows graphically the steady increase in the quantity of wood used in this industry in the past five years.

The increase from 1910 to 1911 was 12.3 per cent; from 1911 to 1912, 28.8 per cent; from 1912 to 1913, 28.1 per cent; and from 1913 to 1914, 10.4 per cent. The relative positions of the five provinces on the list remained the same as in 1913. Increases took place in the consumption of wood for this purpose in Quebec (1.0 per cent) and Ontario (39.4 per cent). Over four-fifths of the wood consumed in Canada was made into pulp in these two provinces. Decreases in consumption were reported from the three remaining provinces as follows:—British Columbia (4.9 per cent), New Brunswick (7.1 per cent), and Nova Scotia (47.6 per cent).

The average value of pulpwood at the mills in 1914 was \$6.61, an advance of only a few cents from the value reported for 1913. The value increased in British Columbia, remained the same in Quebec, and decreased elsewhere.

Diagram No. 1 presents in graphic form the pulpwood consumption of the various provinces for 1913 and 1914.

DIAGRAM No. 1.

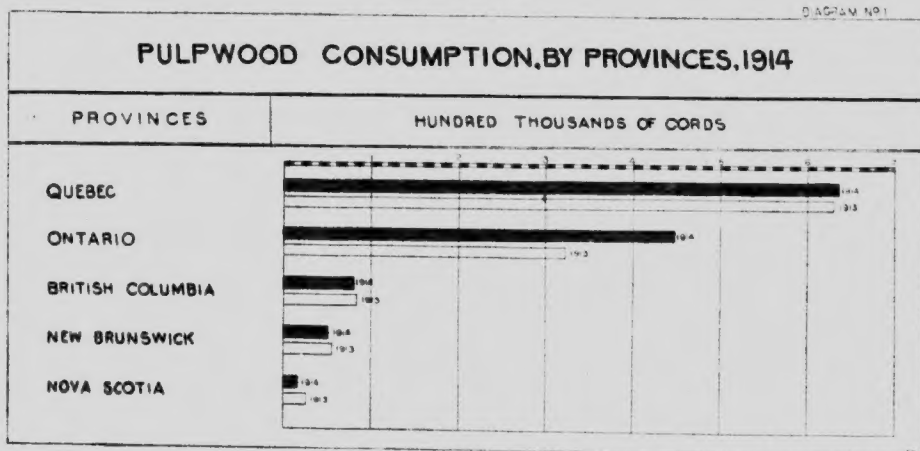
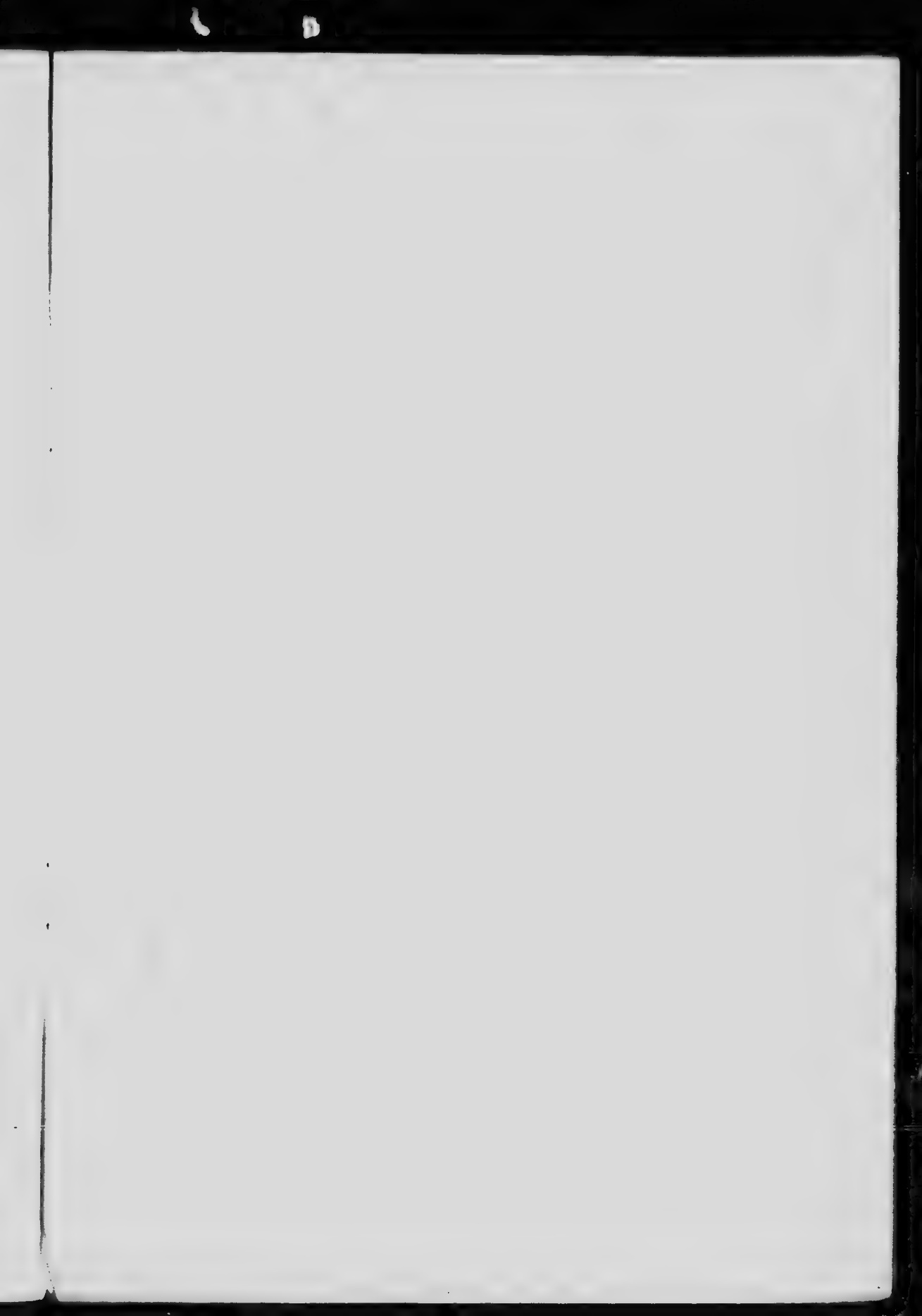
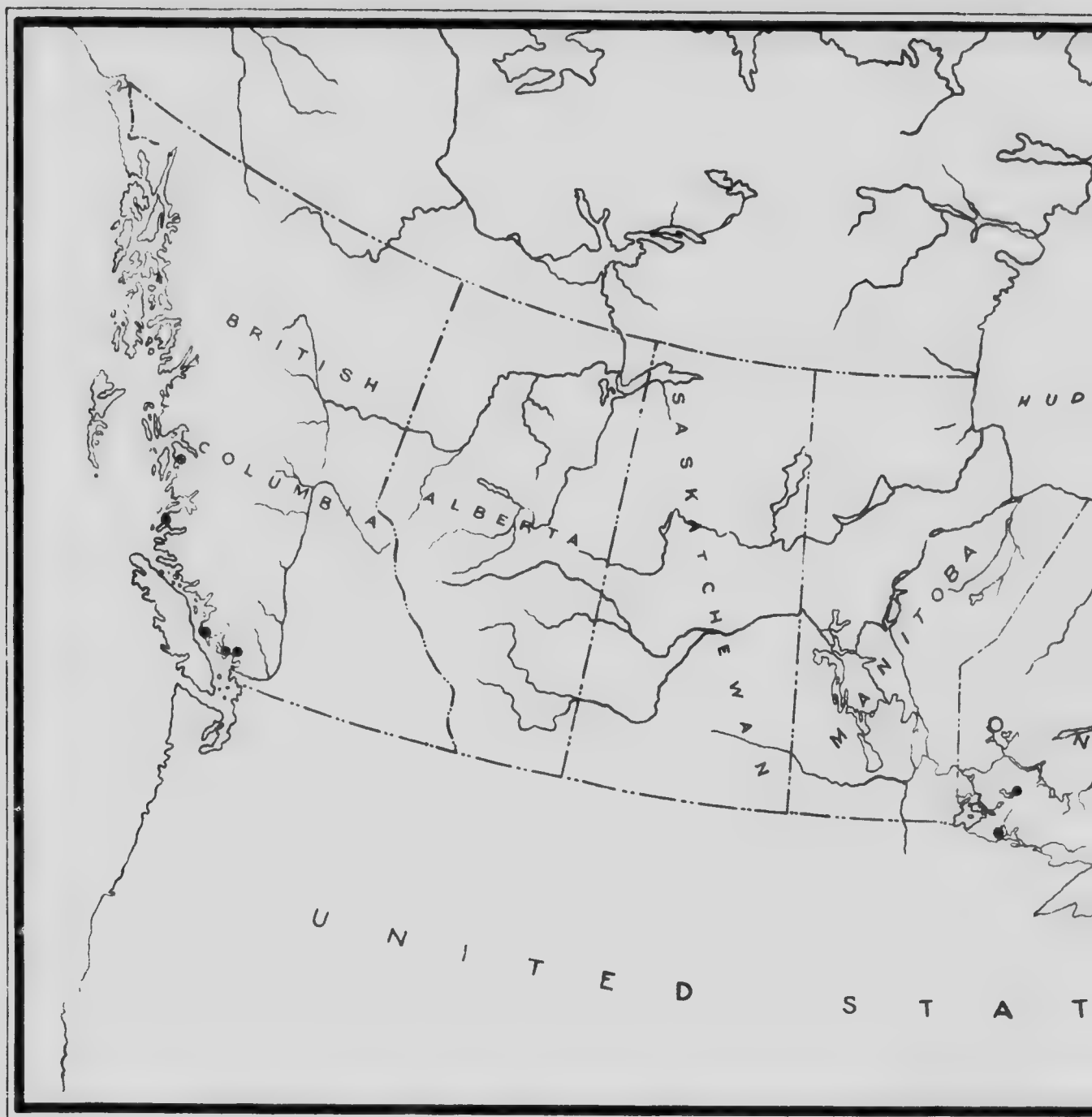


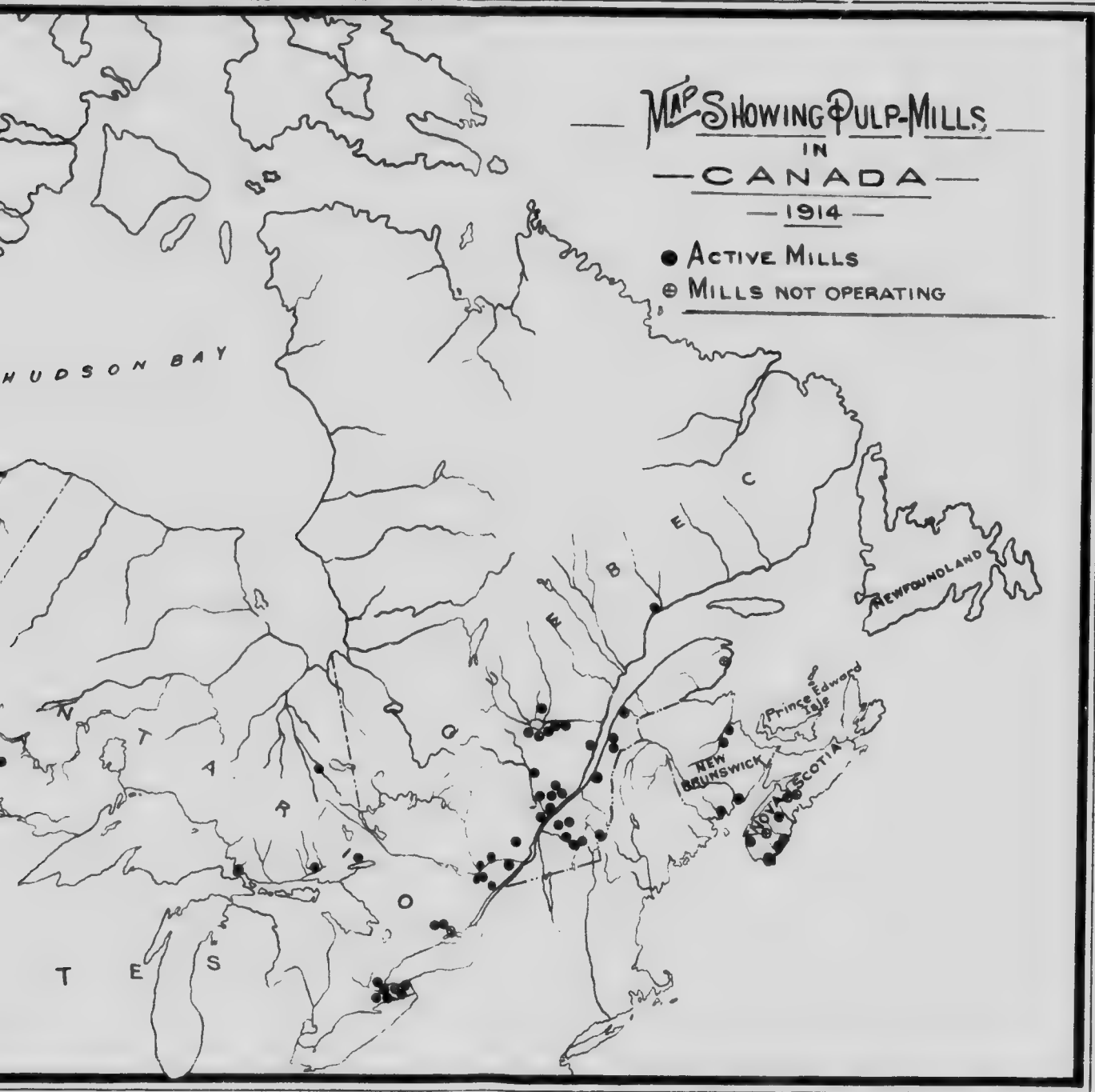
TABLE 2.

PULPWOOD, 1913 AND 1914, BY KINDS OF WOOD: Quantity used and average value 1913 and 1914, and per cent distribution and total value, 1914.

Kinds of Wood.	No. of Active Firms Reporting.	Quantity.		Per cent Distribution.	Total value.	Average value per Cord.	
		1913.	1914.	1914.	1914.	1913.	1914.
		cords.	cords.		\$	\$ c.	\$ c.
Total.....	49	1,109,034	1,224,376	100.0	8,089,868	6.53	6.61
Spruce.....	49	754,858	836,387	68.3	5,605,926	6.76	6.70
Balsam Fir.....	35	283,292	314,183	25.7	2,067,434	6.38	6.56
Hemlock.....	5	47,360	45,246	3.7	254,576	4.25	5.63
Jack Pine.....	3	19,383	24,715	2.0	135,762	5.25	5.49
Poplar.....	3	4,141	3,845	0.3	26,170	7.02	6.81







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The woods most commonly used in pulp manufacture in Canada vary but slightly from year to year. The increased manufacture of sulphate, or kraft, pulp has enabled the manufacturers to use increasing proportions of jack pine. The use of balsam fir has increased steadily in past years. Hemlock is used to a greater extent than any other wood in British Columbia. In every other province but British Columbia, spruce heads the list of woods converted into pulp.

It might be well to explain that the five woods listed in the above table are in reality groups of species. Spruce pulpwood in the Maritime Provinces is composed mostly of red spruce (*Picea rubra*), a tree the distribution of which is confined to this region in Canada. With this are mixed smaller quantities of white spruce (*Picea canadensis*) and black spruce (*Picea mariana*).

In Ontario and western Quebec the red spruce is almost unknown, and forms only a small part of the wood used in pulp manufacture. White spruce grows in Canada from the Atlantic to the Yukon, and is undoubtedly the most important pulp species in the forests of this country. It probably forms 90 per cent of the spruce pulpwood cut in Ontario and Quebec. Smaller quantities of black spruce and red spruce are also cut. In British Columbia, the place of these three eastern spruces is taken by typical British Columbia species. The spruce pulpwood produced in this province at the present time is cut in the coast region, and is the wood of the Sitka spruce (*Picea sitchensis*). The Engelmann spruce of the Selkirk and the Rocky mountains (*Picea Engelmanni*) is not utilized for this purpose at the present time, not because of its lack of satisfactory pulp-producing qualities, but simply because the pulp industry has not been developed in interior British Columbia.

In Eastern Canada only one species of balsam fir occurs, and this tree (*Abies balsamea*) forms the entire production of balsam fir pulpwood in Ontario, Quebec, New Brunswick, and Nova Scotia. In British Columbia the most commonly used balsam fir species are amabilis fir (*Abies amabilis*) and lowland fir (*Abies grandis*). In the interior of the province and on the Rocky Mountain slopes the common species is mountain fir (*Abies lasiocarpa*), which has a similar distribution to Engelmann spruce and, like it, is not used for pulp at the present time.

Eastern hemlock (*Tsuga canadensis*) is not used extensively in the east for pulp manufacture, although it is reported from Ontario, Quebec, and Nova Scotia. The western species (*Tsuga heterophylla*) is the most important pulpwood in British Columbia at the present time, and forms almost half of the wood used in that province. It is said to be superior to the eastern species for pulpwood as well as for lumber and other products.

Jack pine (*Pinus Banksiana*) is used only in Quebec and Ontario, and only in the manufacture of sulphate or kraft pulp. Poplar is also used only in Quebec and Ontario, but is made into ground-wood pulp, sulphite, and kraft fibre. Two species are utilized, aspen poplar (*Populus tremuloides*) forming the greater part of the pulpwood consumed, and balsam poplar (*Populus balsamea*) being used in smaller quantities. Common cottonwood (*Populus deltoides*) and large-toothed aspen (*Populus grandidentata*) are probably also used occasionally. Pulp manufactured from the wood of the poplar species lacks the high tensile strength of that made from spruce, balsam fir, and other coniferous woods, and is used chiefly to give body to book and magazine paper. Mixed with a stronger, coarser pulp it fills in the interstices between the coarser fibres, and makes the paper smooth and opaque.

Diagram No. 2 shows the quantities of the various woods used for pulp in 1913 and 1914.

DIAGRAM No. 2.

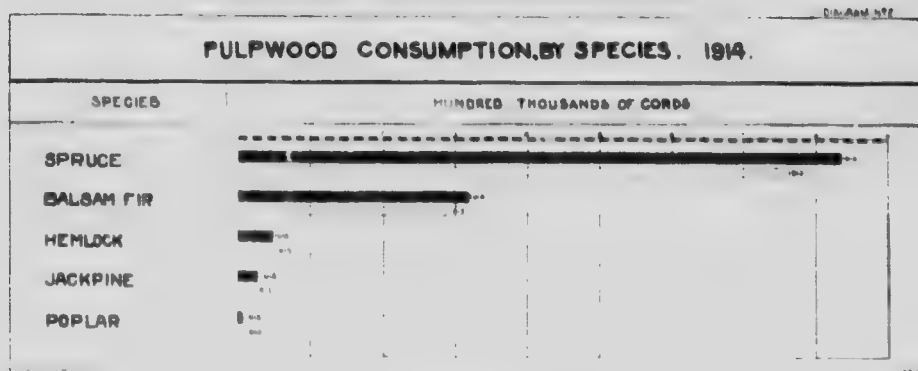


TABLE 3.

PULPWOOD, 1913 AND 1914, BY PROCESSES: Quantity used and average value 1913 and 1914, and per cent distribution, and total value 1914.

Processes.	No. of Active Firms Reporting.	Quantity.		Per cent Distribution.	Total value.	Average value per Cord.	
		1913	1914			1913.	1914.
		Cords.	Cords.		\$	\$ c.	\$ c.
Total	49	1,109,631	1,224,376	100.0	8,089,868	6.53	6.61
Mechanical.....	40	600,216	644,924	52.7	1,424,067	6.59	6.86
Sulphite.....	12	367,105	435,101	35.5	2,941,099	6.40	6.76
Sulphate.....	6	136,569	140,666	11.5	698,207	6.65	4.96
Soda.....	1	5,144	3,785	0.3	26,495	6.05	7.00

The proportion of wood used in the manufacture of chemical fibre in Canada is steadily increasing. In 1910, only 22 per cent of the wood was converted into pulp by the chemical processes. In 1914 this proportion had increased to 47.3 per cent, almost half the total.

In the mechanical process, where the fibres are more or less broken and their strength impaired, only the best quality of pulpwood can be used. The machinery, however, is comparatively cheap and easily installed, and as long as the supply of good pulpwood was convenient this process was largely used. Of late years the quantity of wood used in the sulphite process has steadily increased in spite of the high cost of installing the necessary plant. In this process the wood requirements are not so exacting, and the higher price for the pulp produced compensates for the greater cost of the plant.

The introduction of the sulphate or kraft process for the manufacture of coarse, strong, dark-coloured pulp for wrapping-papers has permitted the use of jack pine and other so-called inferior species in a greater proportion than had hitherto been possible.

In 1913 the wood used in the mechanical process for the manufacture of ground-wood pulp formed 54.1 per cent of the total consumption. This proportion was reduced to 52.7 per cent in 1914. The proportion in the case of

sulphite pulp increased from 33.1 to 35.5 per cent, but a decrease took place with the sulphate or kraft process from 12.3 per cent to 11.5 per cent. The only actual decrease in quantity was in the case of wood used in the soda process.

Diagram No. 3 shows the proportionate amounts of wood manufactured by the various processes.

DIAGRAM No. 3.

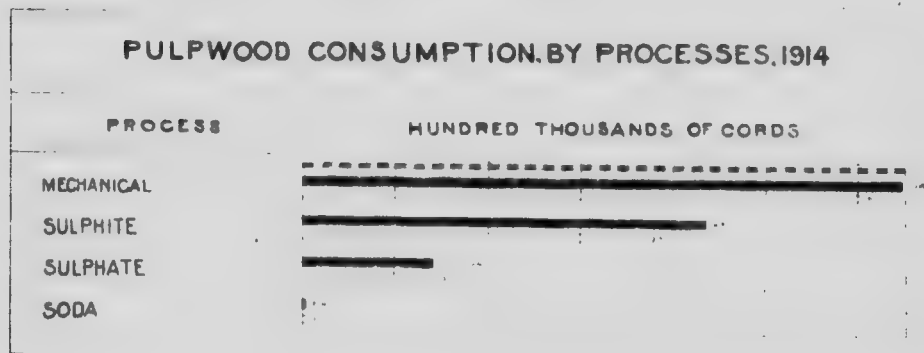


TABLE 4.

PULPWOOD, 1914, BY PROVINCES, KINDS OF WOOD, AND PROCESSES: Number of Active Firms reporting, quantity of pulpwood used, quantity of pulp produced, quantity of each kind of wood used in each process, total cost and average cost per cord.

	Total.	Quebec.	Ontario.	British Columbia.	New Brunswick.	Nova Scotia.
Number of Active Firms Reporting	49	23	15	2	4	5
Pulp Produced—						
Aggregate..... tons	934,700	515,409	325,233	56,352	26,829	10,777
Mechanical..... "	641,924	394,321	202,715	32,692	4,319	10,777
Sulphite..... "	217,550	56,503	115,877	23,660	21,510	
Sulphate..... "	70,333	62,692	6,641		1,000	
Soda..... "	1,893	1,893				
Wood Used—						
Aggregate..... Cords	1,224,376	636,496	447,751	80,013	49,339	10,777
Aggregate cost..... \$	\$8,059,868	\$4,148,105	\$3,172,235	\$426,444	\$296,769	\$46,015
Average cost..... \$	\$ 6 61	\$ 6 52	\$ 7 08	\$ 5 33	\$ 6 01	\$ 4 27
Spruce—						
Total..... Cords	836,387	404,290	358,998	21,637	41,895	9,577
Total cost..... \$	\$5,605,926	\$2,683,759	\$2,508,748	\$116,145	\$255,125	\$42,151
Average cost..... \$	\$ 6 70	\$ 6 64	\$ 6 98	\$ 5 37	\$ 6 09	\$ 4 40
Mechanical..... Cords	449,162	258,997	168,897	8,816	2,875	9,577
Sulphite..... "	302,211	67,592	184,778	12,821	37,020	
Sulphate..... "	81,797	74,484	5,313		2,000	
Soda..... "	3,217	3,217				
Balsam Fir—						
Total..... Cords	314,183	211,943	75,218	18,604	7,444	974
Total cost..... \$	\$2,067,431	\$1,337,902	\$587,003	\$97,699	\$41,644	\$3,186
Average cost..... \$	\$ 6 58	\$ 6 31	\$ 7 80	\$ 5 25	\$ 5 59	\$ 3 27
Mechanical..... Cords	181,957	135,324	33,318	10,897	1,444	974
Sulphite..... "	99,621	44,014	41,900	7,707	6,000	
Sulphate..... "	32,037	32,037				
Soda..... "	568	568				
Hemlock—						
Total..... Cords	45,246	172	5,076	39,772		226
Total cost..... \$	\$254,576	\$688	\$40,608	\$212,602		\$678
Average cost..... \$	\$ 5 63	\$ 4 00	\$ 8 00	\$ 5 35		\$ 3 00
Mechanical..... Cords	13,205			12,979		226
Sulphite..... "	31,869		5,076	26,793		
Sulphate..... "	172	172				
Jack Pine—						
Total..... Cords	24,715	16,746	7,969			
Total cost..... \$	\$135,762	\$103,886	\$31,876			
Average cost..... \$	\$ 5 49	\$ 6 20	\$ 4 00			
Sulphate..... Cords	24,715	16,746	7,969			
Poplar—						
Total..... Cords	3,845	3,345	500			
Total cost..... \$	\$26,170	\$22,170	\$4,000			
Average cost..... \$	\$ 6 81	\$ 6 63	\$ 8 00			
Mechanical..... Cords	500		500			
Sulphite..... "	1,400	1,400				
Sulphate..... "	1,945	1,945				

The table above gives the same information as that contained in Tables 1, 2, and 3, but in a different form, showing more of the individual details of the consumption of wood in pulp manufacture. The average values given are values at the mill, and as these are affected by so many factors they cannot be taken to represent the intrinsic value of the material in each case. Mills on the Niagara peninsula, for instance, pay much higher transportation charges on their

raw material than those situated in the heart of the pulpwood regions of Quebec. Many mills own their own limits and put a value on their raw material of little more than the bare cost of cutting and transporting it from the woods to the mill. Many firms, specially in Ontario, buy pulpwood on the open market.

The figures for pulp production are based on the assumption that one cord of wood will produce one ton of ground wood pulp, and one-half ton of chemical fibre, air dry. (Air-dry pulp is assumed to contain 10 per cent of moisture.)

The estimated quantity of wood-pulp manufactured was 934,700 tons, an increase over 1913 of 9.4 per cent. The increase in the manufacture of ground-wood pulp was only 7.4 per cent, while that of pulp produced by the three chemical processes was almost 14 per cent. Considering these three processes separately it is seen that the greater increase was in the case of sulphite pulp, amounting to 18.7 per cent of the production of 1913 while that of sulphate pulp was 3 per cent. The quantity of soda pulp estimated was a decrease of over a quarter from 1913.

Mechanical pulp is manufactured in all five provinces, Quebec leading with over 60 per cent of the total. Sulphite pulp is manufactured in every province but Nova Scotia. Ontario leads in the production of this class of fibre, with 53.3 per cent. Sulphate or kraft fibre is manufactured in Quebec, Ontario and New Brunswick; Quebec producing almost 90 per cent of the total. Soda pulp is produced only in Quebec province.

TABLE 5.

CANADIAN PULPWOOD EXPORTED UNMANUFACTURED VS. THAT MANUFACTURED IN CANADA, 1913 AND 1914: Quantity, average value per cord and per cent distribution.

	1913.				1914			
	Quantity.	Value.	Value per Cord.	Per Cent.	Quantity.	Value.	Value per Cord.	Per Cent.
	Cords.	\$	\$ c.		Cords.	\$	\$ c.	
Canada—								
Production..	2,144,064	14,313,939	6 68	100.0	2,196,884	14,770,358	6 72	100.0
Manufacture ..	1,109,034	7,243,368	6 53	51.7	1,224,376	8,080,808	6 60	55.7
Export.....	1,035,030	7,070,571	6 83	48.3	972,508	6,689,490	6 87	44.3
Quebec—								
Production..	1,432,594	9,495,165	6 63	100.0	1,323,917	8,882,899	6 71	100.0
Manufacture ..	629,934	4,107,689	6 52	44.0	636,490	4,148,405	6 52	48.1
Export.....	802,260	5,387,476	6 71	56.0	687,421	4,734,494	6 77	51.9
Ontario.								
Production ..	405,943	2,822,859	6 95	100.0	587,191	4,020,510	6 84	100.0
Manufacture ..	321,244	2,297,389	7 15	79.1	447,751	3,172,235	7 08	76.2
Export.....	84,699	525,470	6 20	20.9	139,743	848,275	6 07	23.8
New Brunswick—								
Production ..	194,674	1,449,525	7 45	100.0	193,126	1,382,315	7 16	100.0
Manufacture ..	53,121	342,243	6 44	27.3	49,339	296,769	6 01	25.5
Export.....	141,553	1,107,282	7 82	72.7	143,787	1,085,546	7 55	74.5
British Columbia—								
Production..	84,242	402,428	4 78	100.0	80,013	426,444	5 33	100.0
Manufacture ..	84,173	401,218	4 77	99.9	80,013	426,444	5 33	100.0
Export.....	69	1,210	17.54	0.1				
Nova Scotia—								
Production..	26,611	143,962	5 41	100.0	12,334	58,190	4 72	100.0
Manufacture ..	20,562	94,829	4 61	77.3	10,777	46,015	4 27	87.4
Export.....	6,049	49,133	8 12	22.7	1,557	12,175	7 82	12.6

The figures in the above table for exports of pulpwood were obtained from the Department of Customs for the calendar years 1913 and 1914. It is interesting to note the steadily increasing proportion of the pulpwood manufactured in Canadian mills. In 1910 only a little more than one-third (38.8 per cent) of the pulpwood cut in our forests was manufactured into pulp in our own mills. In 1911 this had increased to 44.2 per cent; in 1912 to 46.9 per cent; in 1913 to 51.7; and in 1914 to 55.7 per cent; well over half of the total. There was also a decrease in the actual quantity of raw pulpwood exported from Canada in 1914 as compared to 1913 of some 62,522 cords. While this condition of affairs may not be entirely satisfactory to the United States pulp companies which rely to a large extent on the forests of Canada for their supply of raw material, it is gratifying to note the fact that this form of forest product is becoming more thoroughly appreciated in Canada.

In Ontario, by an Order in Council, dated January 13, 1900, regulations were made by which the exportation of spruce and other woods suitable for pulp, cut on lands of the Crown, was prohibited. Recently in severe windstorms there were blown down large quantities of pulpwood, which would have been destroyed unless speedily cut and marketed, and as the market for pulpwood was more or less congested this "manufacturing condition," to which all sales and licenses had been subject, was suspended for the season of 1914 and again for 1915.

In the province of Quebec an article in the Regulations says that all timber cut on Crown lands in the province must be manufactured in Canada. This regulation came into force on April 26, 1910. The regulation was changed during the last year so as to exclude mine props to be used in coal mines in Great Britain if shipped during the past season of navigation.

Similar legislation was passed in New Brunswick on April 26, 1911, which was similarly amended with respect to pit props by an Order in Council dated October 15, 1914.

There are no statutes prohibiting or regulating the export of pulpwood from the provinces of Nova Scotia or British Columbia.

WOOD-PULP.

The figures in the following tables of exports and imports of wood-pulp were furnished by the Customs Department.

TABLE 6.

EXPORTS OF WOOD-PULP, 1913 AND 1914: Quantity, total value, average value per ton, per cent distribution and countries to which exported.

Kinds of Pulp and Countries to which Exported.	1913.				1914			
	Quantity.	Value.	Average Value per Ton.	Per Cent Dist.	Quantity.	Value.	Average Value per Ton.	Per Cent Dist.
	Tons.	\$	\$ c		Tons.	\$	\$ c	
Wood-pulp exported, aggregate.	798,100	8,913,380	11 83	100 0	474,883	8,865,438	18 87	100 0
Total Mechanical Pulp	230,644	3,317,593	14 38	77 4	314,485	4,509,200	14 34	74 0
Total Chemical Pulp.	67,525	2,595,995	38 44	22 6	110,398	4,356,176	39 46	26 0
Total to United States.	198,110	4,471,039	22 57	66 4	295,674	7,008,312	23 70	69 0
Mechanical	137,922	2,150,227	15 59		190,695	2,832,909	14 90	
Chemical	60,188	2,321,712	38 57		105,579	4,175,403	39 56	
Total to Great Britain	92,916	1,172,750	12 62	31 2	116,843	1,581,101	13 53	27 5
Mechanical	92,722	1,167,338	12 59		116,820	1,580,301	13 53	
Chemical	194	5,412	27 90		23	800	34 78	
Total to France					7,612	97,475	12 81	1 8
Mechanical					7,590	96,050	12 66	
Chemical					43	1,425	33 14	
Total to Japan	7,031	265,071	37 70	2 4	4,755	178,548	37 55	1 1
Chemical	7,031	265,071	37 70		4,755	178,548	37 55	
Total to China	112	3,800	33 93	*				
Chemical	112	3,800	33 93					

*Less than one-tenth of 1 per cent.

During 1914, Canada exported 126,714 tons more of manufactured wood-pulp than in 1913, an increase of 42.5 per cent. While the increase in the exportation of ground-wood was 36.4 per cent, that of chemical fibre was 63.5 per cent. This increase is partly due to the general advance of the industry in Canada and partly to the fact that while the capacity of pulp-mills has increased in the last year, the paper industry has not kept pace with the supply of pulp, and the surplus of manufactured fibre has found a market in other countries. The United States has been our most important purchaser of pulp in the past, and the proportion of Canadian pulp exported to that country in 1914 was almost 70 per cent of the total. Great Britain also buys large quantities of Canadian wood-pulp, and these two countries together usually take the bulk of the exports from Canada. France imported Canadian pulp in 1914 for the first time since 1910. Other countries, including Belgium, Mexico, Australia, Cuba, New Zealand, and Newfoundland have imported small quantities of wood-pulp from Canada in the last five years, but the trade with these countries has varied greatly from year to year. The average price of exported wood-pulp changed very slightly. That of ground-wood pulp decreased by a few cents, and that of chemical fibre increased by about one dollar a ton.

TABLE 7.

IMPORTS OF WOOD-PULP, 1913 AND 1914. Total value, per cent distribution and countries from which imported.

Countries from which imported.	1913		1914	
	Value.	Per Cent Distribution.	Value.	Per Cent Distribution.
Total Value of Imports.....	\$ 356,962	100.0	\$ 424,601	100.0
United States.....	303,543	85.1	216,361	51.0
Sweden.....	36,843	10.3	136,540	32.2
Norway.....	1,387	0.4	61,254	14.4
Switzerland.....	1,006	0.3	5,285	1.2
Great Britain.....	10,197	2.8	4,375	1.0
Austria-Hungary.....			786	0.2
Germany.....	3,886	1.1		

In spite of the fact that Canada in 1914 produced nearly a million tons of wood-pulp, valued at approximately twenty million dollars, and exported pulp to the value of over eight million dollars, we still import this commodity from other countries. The importations of wood-pulp in 1914 were valued at \$426,601, an increase over the imports of 1913 of 19 per cent. Although the greater part of the material comes from the United States (51 per cent), the value of imports from that country decreased by \$87,182 in 1914. A decrease took place in the value of imports from Great Britain, and no pulp was imported from Germany, but increases are to be noted with the other countries on the list, especially Sweden.

APPENDIX.

List of Active Canadian Pulp-mills.

The following is a list of firms operating pulp-mills in Canada in 1914 to whom the Forestry Branch is indebted for the data upon which this bulletin is compiled:

QUEBEC.

- Belgo-Canadian Pulp and Paper Company, Ltd., Shawinigan Falls—Ground-wood Pulp.
- Brompton Pulp and Paper Company, Ltd., Bromptonville—Ground-wood Pulp.
- Brompton Pulp and Paper Company, Ltd., East Angus (2 mills)—Ground-wood Pulp and Sulphate Fibre.
- Brown Corporation, La Tuque (office, Portland, Maine)—Sulphate Fibre.
- Canada Paper Company, Ltd., Windsor Mills (2 mills) Ground-wood Pulp and Soda Fibre.
- Chicoutimi Pulp Company, Chicoutimi—Ground-wood Pulp.
- Donnacona Paper Company, Donnacona (2 mills) —Ground-wood Pulp and Sulphite Fibre.

Dominion Paper Company, Kingsey Falls (2 mills), (office, Montreal)—Ground-wood Pulp and Sulphate Fibre.

Eddy, E. B., Co., Ltd., Hull (2 mills)—Ground-wood Pulp and Sulphite Fibre.

Gres Falls Company, Cap Magdeleine (Union Bag and Paper Company, New York)—Ground-wood Pulp.

Gulf Pulp and Paper Company, Clarke City—Ground-wood Pulp.

Jacques Cartier Pulp and Paper Company, Pont Rouge (office, Montreal)—Ground-wood Pulp.

Jonquieres Pulp Company, Ltd., Jonquieres—Ground-wood Pulp.

Lake Megantic Pulp Company, Lake Megantic—Ground-wood Pulp.

Laurentide Company, Limited, Grand Mere (2 mills)—Ground-wood Pulp and Sulphite Fibre.

MacLaren, James, Company, Ltd., Buckingham—Ground-wood Pulp.

News Pulp and Paper Company, Ltd., St. Raymond (office, Montreal)—Ground-wood Pulp.

Nicolet Falls Pulp and Lumber Company, Nicolet Falls—Ground-wood Pulp.

Ouiatchouan Falls Paper Company, Ouiatchouan Falls (office, Chicoutimi)—Ground-wood Pulp.

Price Brothers and Company, Ltd., Kenogami (office Jonquieres) (2 mills)—Ground-wood Pulp and Sulphite Fibre.

River du Loup Pulp Company, Ltd., Fraserville—Ground-wood Pulp.

Soucy, F. Florentin, St. Antonin (office, Old Lake Road)—Ground-wood Pulp.

Wayagamack Pulp and Paper Company, Ltd., Three Rivers—Sulphate Fibre.

Wilson, J. C., Ltd., St. Jerome—Ground-wood Pulp.

ONTARIO.

Abitibi Power and Paper Company, Ltd., Iroquois Falls—Ground-wood Pulp.

Beaver Wood Fibre Company, Ltd., Thorold—Ground-wood Pulp.

Booth, J. R., Ottawa (2 mills)—Ground-wood Pulp and Sulphite Fibre.

Bronson Company, Ottawa—Ground-wood Pulp.

Davy Pulp and Paper Company, Ltd., Thorold—Ground-wood Pulp.

Dryden Timber and Power Company, Ltd., Dryden—Sulphate Fibre.

Foley-Rieger Pulp and Paper Company, Ltd., Thorold—Ground-wood Pulp.

Fort Frances Pulp and Paper Company, Ltd., Fort Frances—Ground-wood Pulp.

Lake Superior Paper Company, Ltd., Sault Ste. Marie (2 mills)—(Spanish River Pulp and Paper Mills, Ltd.)—Ground-wood Pulp and Sulphite Fibre.

Northumberland Paper and Electric Company, Ltd., Campbellford—Ground-wood Pulp.

Ontario Paper Company, Ltd., Thorold—Ground-wood Pulp.

Toronto Paper Manufacturing Company, Ltd., Cornwall—Sulphite Fibre.

Riordon Pulp and Paper Company, Ltd., Hawkesbury—Sulphite Fibre.

Riordon Pulp and Paper Company, Ltd., Merritton—Sulphite Fibre.

Spanish River Pulp and Paper Mills, Ltd., Sturgeon Falls (2 mills)—Ground-wood Pulp and Sulphite Fibre.

Spanish River Pulp and Paper Mills, Ltd., Espanola—Ground-wood Pulp.

Thorold Pulp Company, Ltd., Thorold—Ground-wood Pulp.

Trent River Paper Company, Frankford—Ground-wood Pulp.

NOVA SCOTIA.

Campbell Lumber Company, Ltd., Weymouth (2 mills)—Ground-wood Pulp.
Clyde River Pulp and Paper Company, Ltd., Clyde River—Ground-wood Pulp.
La Have Pulp Co., Ltd., New Germany (office, Bridgewater)—Ground-wood Pulp.
MacLeod Pulp Company, Ltd., Milton (2 mills)—(office, Liverpool)—Ground-wood Pulp.
Nova Scotia Wood-Pulp and Paper Company, Charleston—Ground-wood Pulp.

NEW BRUNSWICK.

Dominion Pulp Company, Ltd., Chatham—Sulphite Fibre.
New Brunswick Pulp and Paper Co., Ltd., Millerton—Sulphate Fibre.
Partington, Edward, Pulp and Paper Company, Ltd., St. John—Sulphite Fibre.
St. George Pulp and Paper Company, Ltd., St. George—Ground-wood Pulp.

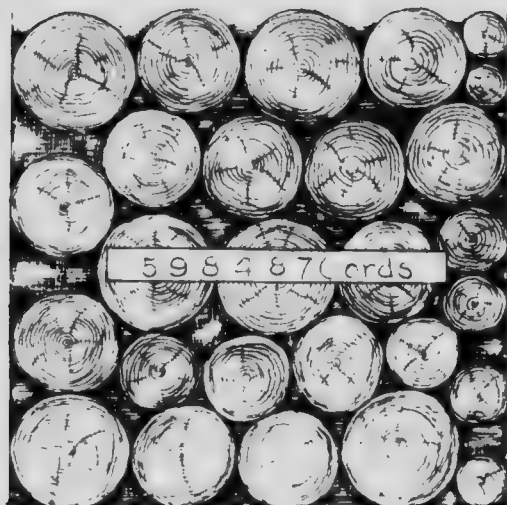
BRITISH COLUMBIA.

British Columbia Sulphite Fibre Company, Ltd., Mill Creek, we Sound, (office, Vancouver)—Sulphite Fibre.
Powell River Company, Ltd., Powell River (2 mills)—Ground-wood Pulp and Sulphite Fibre.

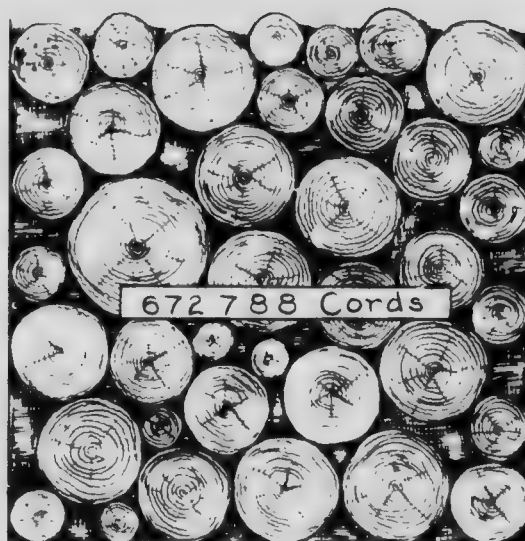


PULPWOOD Consumed in CANADIAN PULPMILL

One CORD 128 C



1910



1911



1912

MILLE DURING THE PAST FIVE YEARS 1910-1914

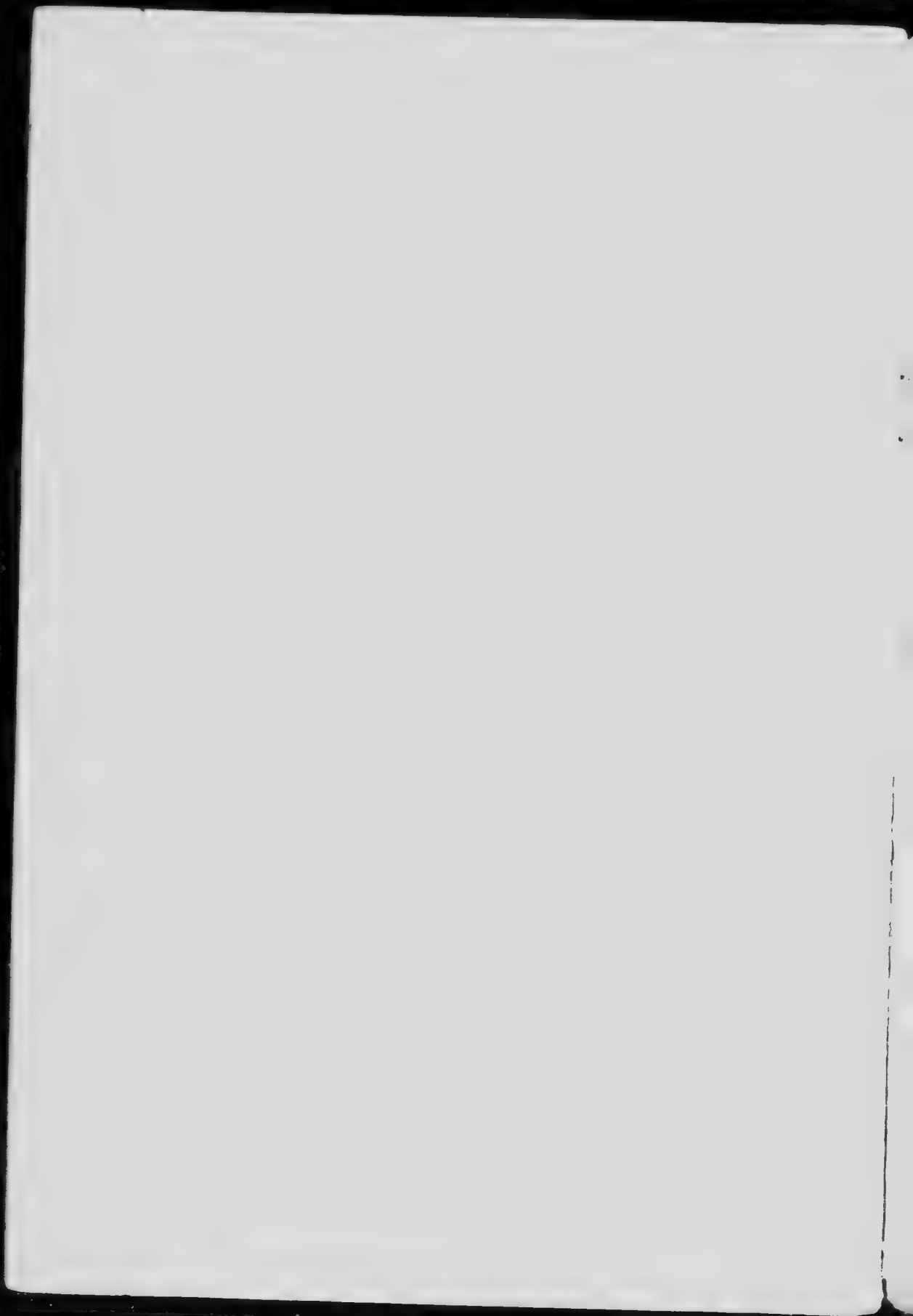
28 CUBIC FEET STACKED WOOD

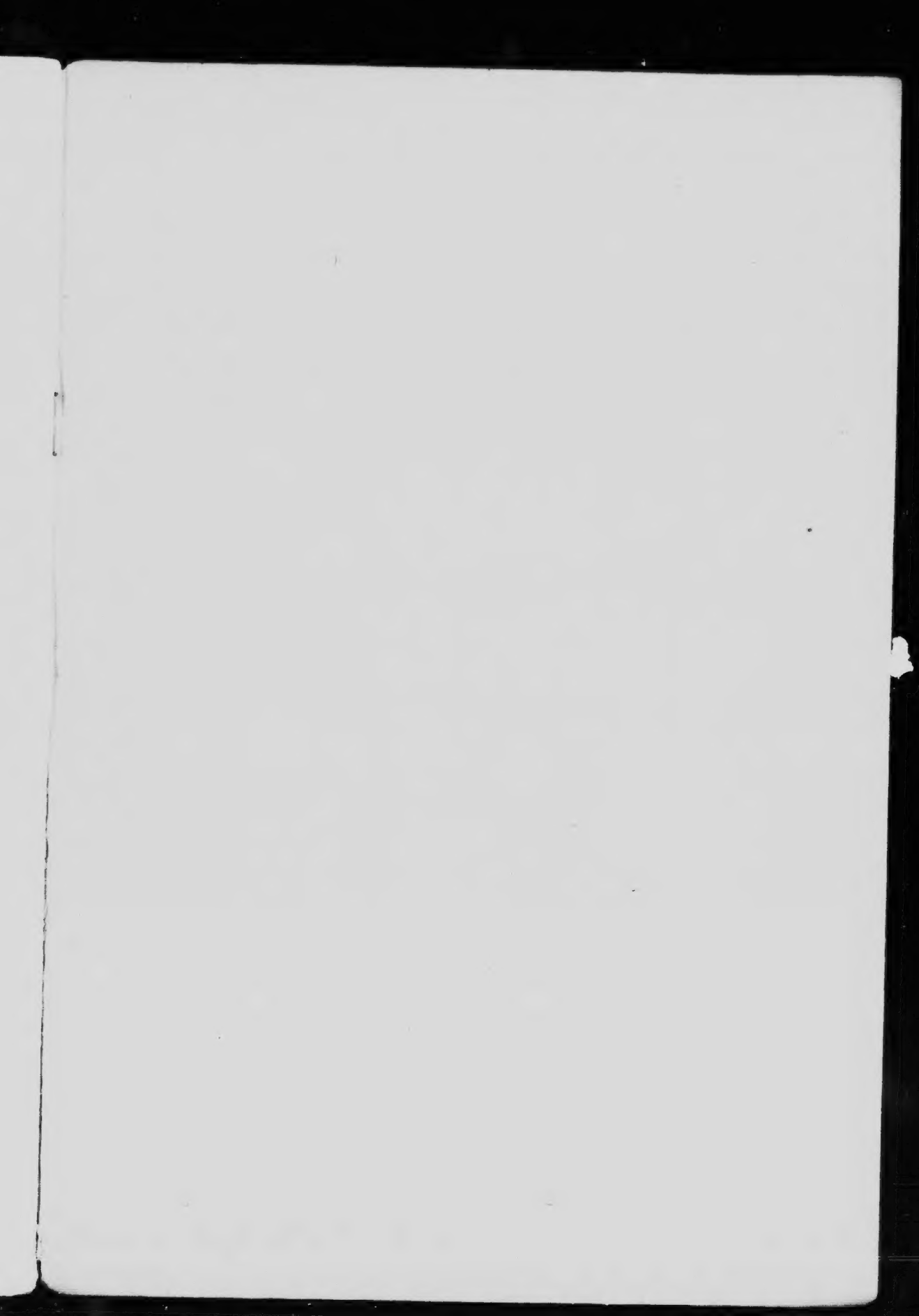


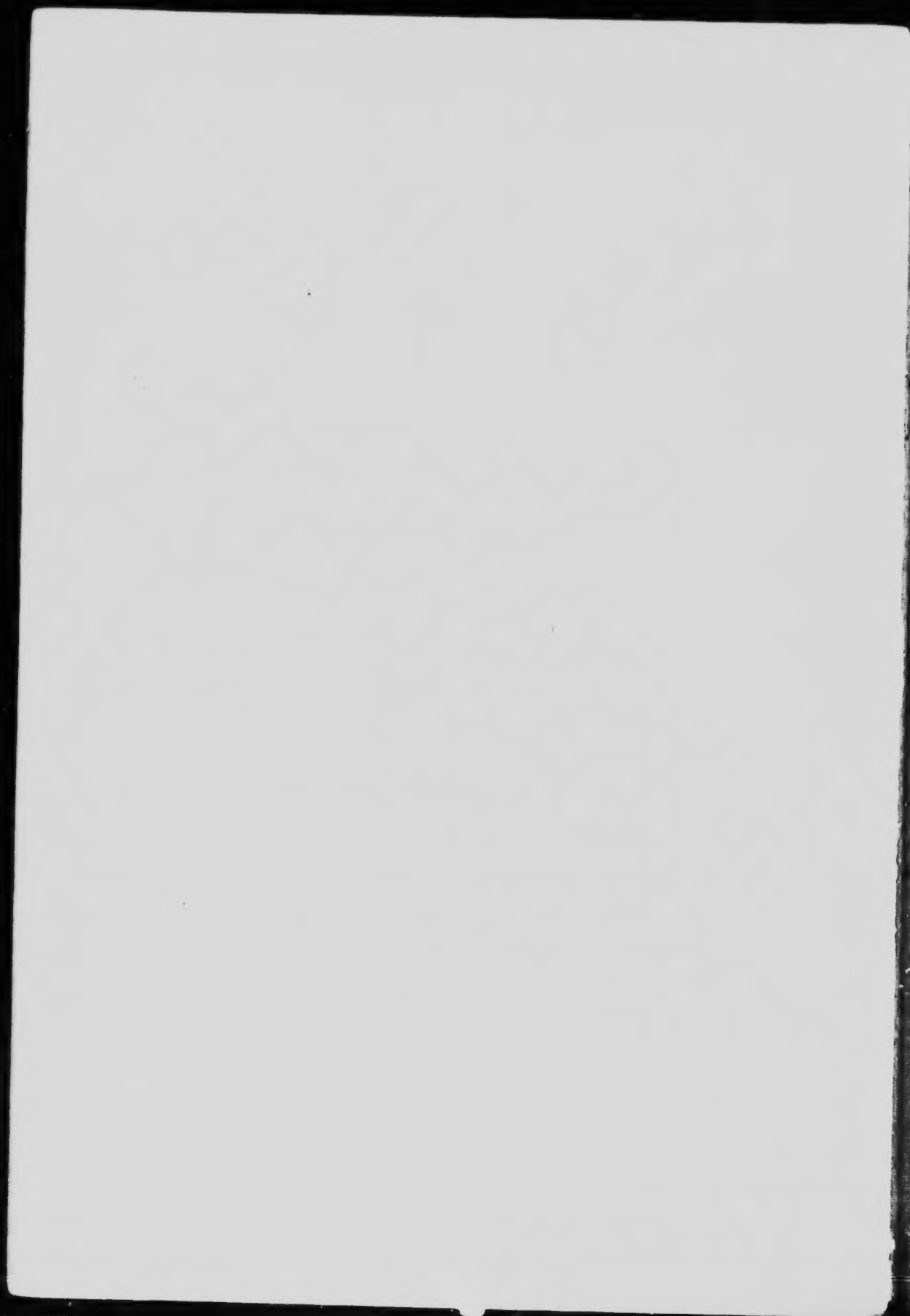
1913



1914







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